EPSON®
Programming Guide
For
6 Color
EPSON Stylus Ink Jet Printer

Stylus Photo 870

(Level I)

EPSON Imaging Technology Center Released: 10/6/00
Revision: 1

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This Programming Guide is intended for use in conjunction with the EPSON Standard *ESC/P Reference Manual (December 1997)*

CHAPTER 1 : INTRODUCTION

This section of the Programming Guide will provide a technical overview of EPSON's Stylus Photo 870 inkjet printer to facilitate driver development.

1.1 EPSON Stylus Photo 870

The Stylus Photo 870 is a six-color inkjet printer from EPSON. The Stylus Photo 870 is targeted for home photography uses. Printouts are intended to last as long as traditional color photo lab prints, using 1440 x 720 dpi. This printer allows continuous edge-to-edge snapshots with the EPSON Digital PhotoLab™ Starter Kit. The starter kit includes a roll paper holder, EPSON Premium Glossy Photo Roll Paper and helpful photo software like EPSON Software™ Film Factory™ and Adobe® PhotoDeluxe®. The user will be capable of printing snapshots, personal photo greeting cards and bigger-than-life panoramics.
Excluding the Japanese market, this printer is sold world wide as the Stylus Photo 870.

The Stylus Photo 870 uses the Micro Piezo print head and two-cartridges. It uses one black ink cartridge and one multicolor cartridge that contains five inks. The five inks in the single multicolor cartridge are Yellow, Cyan, Light-Cyan, Magenta and Light-Magenta. All of the color inks have the same ink formulation.

The EPSON Stylus Photo 870 printer incorporates the following features:

- Six individual ink colors
- Built in Automatic Sheet Feeder (ASF)
- Built-in 8-bit bidirectional parallel interface (IEEE-1284)
- Print densities up to 1440(H) x 720(V)
- Wide range of paper types

With the Stylus Photo 870's bi-directional interfaces and EPSON's Remote Mode bi-directional printer control language, the host computer can obtain key printer status information.

This document doesn't contain information for an individual ISV's specific driver development, but does contain the new ESC/P 2 commands associated with the Stylus Photo 870's ability to reproduce subtle tone variations. For example, commands such as: Select dot Size "ESC (e", Select Ink Color "ESC (r", and a few recently enhanced ESC/P 2 commands are included in this section of the Programming Guide.

Table 1 EPSON Stylus Photo 870 Printer Feature Summary

EPSON Stylus Photo 870	
Print Head	48 black nozzles 240 color nozzles, 48 nozzles x 5 (CcMmY).
Interface (s)	Parallel, and Serial
Printer Language	ESC/P Raster & Remote Mode
Max Resolution (dpi)	1440(h) x 720(v)
Selectable dot size	Yes
Ink Type	***CcMmYK
Ink Droplet Size	4 picoliters

*** - CcMmYK refers to: Cyan, Light Cyan, Magenta, Light Magenta, Yellow and Black

CHAPTER 2 PAPER - TYPES, SIZES AND ORIENTATION MODE

2.1 EPSON Paper Types and Sizes for the Stylus Photo 870

EPSON Stylus Photo 870 printer will print on paper in the following sizes:

Table 2 The EPSON Stylus Photo 870 Paper Types and Sizes

Paper Type		Size	US	EU	JPN
Plain paper	Cut sheets	Legal	Yes	Yes	Yes
		Letter	Yes	Yes	Yes
		Executive	Yes	No	No
		Half-Letter	Yes	No	No
		A4	Yes	Yes	Yes
		A5	No	Yes	No
		B5	No	No	Yes
		User-defined	Yes	Yes	Yes
	Envelopes	#10	Yes	Yes	No
		C6	Yes	Yes	No
		DL	Yes	Yes	No
		132x220	Yes	Yes	No
	Postcards (card)	Postcard	No	No	Yes
		Return Postcard	No	No	Yes
	Index cards (card)	A6	No	Yes	No
		5in. x 8in.	Yes	Yes	No
		8in. x 10in.	Yes	Yes	No
Photo Quality Ink Jet Paper	Cut sheets	Legal	Yes	No	No
		Letter	Yes	No	No
		A4	No	Yes	Yes
	Postcard (card)	Postcard	No	No	Yes
	Index card (card)	A6	No	Yes	No
		5in. x 8in.	Yes	Yes	No
		8in. x 10in.	Yes	Yes	No
Matte Paper - Heavyweight	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	No
360 dpi Ink Jet Paper	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	No
	Index card (card)	A6	Yes	Yes	No
	Postcard (card)	Postcard (Address Side)	No	No	No

Paper Type		Size	US	EU	JPN
Photo Paper	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	Yes
	Photo Paper (card)	113.6x175.4mm	Yes	Yes	Yes
	Photo Paper	100x150 mm	No	Yes	No
	Photo Paper	200x300 mm	No	Yes	No
	Postcard (card)	Postcard	No	No	Yes
	Roll Paper	W A4	Yes	Yes	Yes
		W 100mm	Yes	Yes	Yes
		W 89mm	Yes	Yes	Yes
Photo Quality Glossy Film	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	Yes
		A6	Yes	Yes	Yes
Ink Jet Transparencies	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	Yes
Photo Quality Adhesive sheet	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	Yes
Iron-on Cool Peel Transfer Paper	Cut sheets	Letter	Yes	No	No
		A4	No	Yes	Yes
Photo Stickers	16 cut up	A6	Yes	Yes	No
		Hagaki	No	No	Yes

2.2 EPSON Paper Types and Orientation for the Stylus Photo 870

EPSON Stylus Photo 870 printer will print with portrait or landscape orientation as shown:

Table 3 Paper Types and Orientation

Paper Type	Dimensions W x L	Orientation	
		↓	↓
Legal	8.5in. x 14in.	Yes	No
Letter	8.5in. x 11in.	Yes	No
A4	210 mm x 297 mm	Yes	No
A5	148 mm x 210 mm	Yes	No
A6	105 mm x 148 mm	Yes	No
Executive	7.25 in. x 10.5 in.	Yes	No
Half Letter	5.5 in. x 8.5 in.	Yes	No
B5	182 mm x 257 mm	Yes	No
Index card 5in. x8in.	5 in. x 8 in.	Yes	No
Index card 8in. x10in.	8 in. x 10 in.	Yes	No
Photo Paper 4 in. x 6 in.	113.6 mm x 164.4 mm*1)	Yes	No
Photo Paper 100x150mm	100 mm x 150 mm	Yes	No
Photo Paper 200x300mm	216 mm x 338 mm *2)	Yes	No
Postcard	100 mmx148 mm	Yes	No
Return postcard	200 mmx148 mm	No	Yes
#10 Envelope	9.5 in. x 4 .125 in.	No	Yes
DL Envelope	220 mm x 110 mm	No	Yes
C6 Envelope	162 mm x 114 mm	No	Yes
Envelope 132 x 220	220 mm x 132 mm	No	Yes
Panoramic Photo Paper	210 mm x 594 mm	Yes	No
User-defined	89 to 241.3 mm x 89 to 1117.6 mm (3.5 in. to 9.5 in. x 3.5 in. to 44 in.)	Yes	No
Roll Paper W A4	W 210	Yes	No
Roll Paper W 100 mm	W 100	Yes	No
Roll Paper W 89 mm	W 89	Yes	No

1) Only “Yes” orientations are allowed for the predetermined paper sizes in the above table.
2) Printing at a rotation of 90° for each of the predetermined sizes must be carried out by the application.
3) *1):Photo Paper 4in.x 6in. :113.6 mm x 164.4 mm is the logical size for the printer driver, Real paper-size is 113.6 mm x 175.4 mm.
4) *2):Photo Paper 200 x 300 mm: Top margin non-printable area and Bottom margin non-printable areas are both 14mm.

CHAPTER 3 RECOMMENDATIONS

The following recommendations are provided for development of printer drivers for the Stylus Photo 870 printer. **The values provided are only starting recommendations. Adjustments to these values for different halftone modules may improve driver output quality.**

3.1 Printing Mode Settings of the EPSON Stylus COLOR 460

The EPSON Stylus Photo 870 supports the following printing modes. More information regarding commands for these modes of printing can be found in the Individual Command Specifications portion of this paper.

Table 4 Recommended Print Mode settings

Printing mode	Print density (horizontal x vertical)	Micro Weave	02H value of SN Command
Economy	120(360)dpi x 120dpi	OFF	03
Normal	360dpi x 360dpi	OFF	02
Normal	360dpi x 360dpi	ON	01
Fine	360dpi x 720dpi	ON	00
Photo(720)	720dpi x 720dpi	ON	00
Photo(1440)	1440dpi x 720dpi	ON	00

3.2 Color Ink Mode Setting Recommendations for the Stylus COLOR 870

Table 5 Color ink printing recommendations.

Media	Print quality	Resolution dpi	Bi-directional printing
Plain paper	Normal	360x360	ON
	Photo(720)	720x720	ON
360dpi Ink Jet Paper	Normal	360x360	OFF
Photo Quality Ink Jet Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
Matte Paper - Heavyweight	Fine	360x720	ON
	Photo(720)	720x720	ON
Photo Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
RC Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
Photo Quality Glossy Film	Photo(720)	720x720	OFF
Ink Jet Transparencies	Normal	360x360	OFF

3.3 Black Ink Mode Setting Recommendations for the Stylus COLOR 870

Table 6 Black ink printing recommendations.

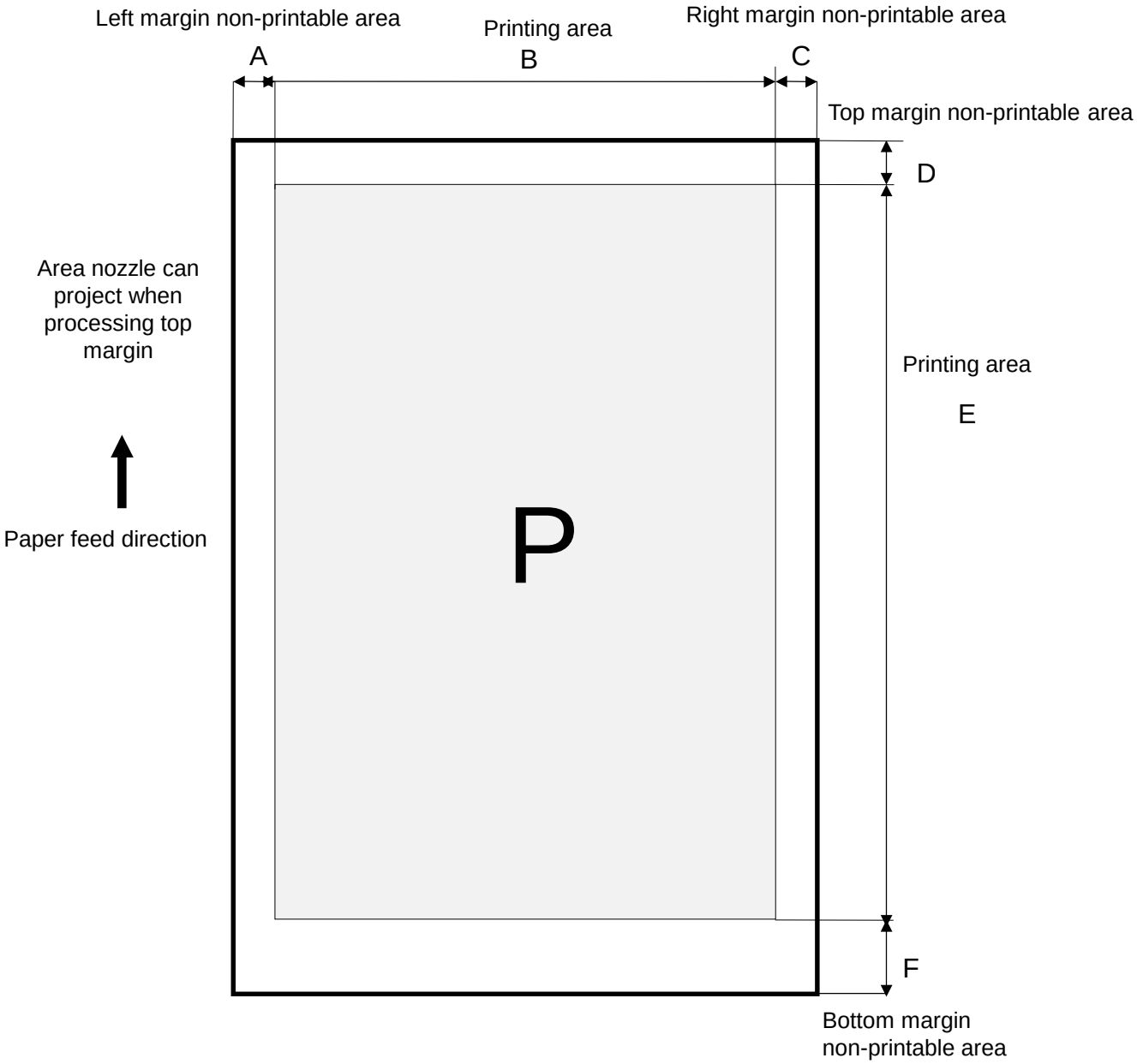
Media	Print quality	Resolution dpi	Bi-directional printing
Plain paper	Normal	360x360	ON
	Photo(720)	720x720	ON
360dpi Ink Jet Paper	Normal	360x360	OFF
Photo Quality Ink Jet Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
Matte Paper - Heavyweight	Fine	360x720	ON
	Photo(720)	720x720	ON
Photo Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
RC Paper	Fine	360x720	ON
	Photo(720)	720x720	ON
Photo Quality Glossy Film	Photo(1440)	1440x720	OFF
Ink Jet Transparencies	Normal	360x360	OFF

CHAPTER 4 PRINTABLE AREAS

4.1 Printable Area – Stylus Photo 870

The division of the paper between printing area and non-printing area is controlled by the values of A, B, C, D, E, G, and H, and by the dot unit (1 dot = 1/360 inch.). When printing near the top and bottom margins in MicroWeave, printing beyond the regions G and H below which the nozzles can project is not possibles.

Table 7 Printable area diagram.



4.2 Printable Areas for Standard Size Papers

Table 8 Standard Printable area values for A, B, D and E according to the printable area diagram.

	A/A(Centered)	B/B(Centered)	D/D(Centered) /D(Expanded)	E/E(Centered) E(Expanded)
Legal	42/42	2976/2976	42/198/42	4800/4644/4956
Letter	42/42	2976/2976	42/198/42	3720/3564/3876
Executive	42/42	2526/2526	42/198/42	3540/3384/3696
Half Letter	42/42	1896/1896	42/198/42	2820/2664/2976
A4	42/42	2892/2892	42/198/42	3969/3813/4125
A5	42/42	2014/2014	42/198/42	2736/2580/2892
A6	42/42	1404/1404	42/198/42	1858/1702/2014
B5	42/42	2496/2496	42/198/42	3403/3247/3559
#10 Envelope	42/(N/A)	2976/(N/A)	42/198/42	1245/1089/1401
DL Envelope	42/(N/A)	2976/(N/A)	42/198/42	1319/1163/1475
C6 Envelope	42/42	2212/2212	42/198/42	1376/1220/1532
Envelope132 x 220	42/42	2976/(NA)	42/198/42	1631/1475/1787
Postcard	42/42	1333/1333	42/198/42	1858/1702/2014
Return postcard	42/42	2751/2751	42/198/42	1858/1702/2014
Index card 5in.x 8in.	42/42	1716/1716	42/198/42	2640/2484/2796
Index card 8in.x 10in.	42/42	2796/2796	42/198/42	3360/3204/3516
Photo Paper 4x6 in.	42/42	1526/1526	42/42/(NA)	2246/2246/(NA)
Panoramic Photo Paper	42/42	2892/2892	42/198/42	8179/8023/8335
Photo Paper 100x150	42/42	1333/1333	42/198/42	1886/1730/2042
Photo Paper 200x300	42/42	2976/2976	42/42/(NA)	4395/4395/(NA)
Roll Paper W A4	42/42	2892/2892	-	-
Roll Paper W 100 mm	-	-	-	-
Roll Paper W 89 mm	-	-	-	-
Roll Paper W 100 mm No Flame	-	-	-	-
Roll Paper W 89 mm No Flame	-	-	-	-

4.3 Printable Areas for User Defined Paper Sizes

Table 9 Maximum Printing area values for A, B, D and E for user-defined paper sizes.

	A/A(Centered)	B/B(Centered)	D/D(Centered) /D(expanded)	E/E(Centered) E(expanded)
User-defined	42/42	max. 2976 / max. 2976	42/198/42	max. 15600 / max.15444 / max. 15756

CHAPTER 5 COMMAND SEQUENCE FLOW

5.1 Raster Graphics Modes

The following three compression modes are available for raster graphics commands:

1) Non-compressed mode	The print data is transferred without compression. This method is especially effective for printing data with low compression ratio, such as photographs.
2) RLL compression mode	The print data is compressed using RLL (run-length limited) data compression. This method is especially effective for data with repeated patterns, such as graphics and illustrations.
3) TIFF compression mode	The print data is compressed using TIFF (Tagged Image File Format) compression. This method is also especially effective for data with repeated patterns, such as graphs, figures and illustrations.

In addition, programmers may wish to utilize the roll paper mode.

5.2 Non-Compressed Mode & RLL Compression Mode Command Transfer Sequences

Command setting procedure for non-compressed mode and RLL compression mode
The basic commands and the sequence in which those commands are to be sent (for non-compressed mode and RLL compression mode) are shown below.

Table 10 Command Setting Procedure of non-compressed and RLL compression mode for Stylus Photo 870

Transfer cycle		Details of setting	Items set	Commands used
By document		1. Initial setting	1.1 Set mechanism sequence	ESC (R SN ESC 00H 00H 00H
			1.2 Initialize printer	ESC @
			1.3 Select graphics mode	ESC (G
			1.4 Set unit	ESC (U
		2. Printing method control	2.1 Turn unidirectional mode on/off	ESC U
			2.2 Select MicroWeave print mode	ESC (i
			2.3 Select dot size	ESC (e
		3. Set print format (single sheet)	3.1 Set page format	ESC (c or ESC(C
			3.2 Set paper dimension	ESC (S
By page	By raster	4. Set vertical position	4.1 Set vertical print position	ESC (V or ESC (v
		5. Transfer data	5.1 Select color	ESC r or ESC (r
			5.2 Set horizontal print position	ESC \ or ESC(/ or ESC $ or ESC ($
			5.3 Print raster graphics: repeat above for each color	ESC .
		6. Form feed	6.1 Form feed	FF
		7. Terminate printing	7.1 Initialize printer	ESC @
			7.2 Set mechanism sequence	ESC (R LD ESC 00H 00H 00H

5.3

TIFF Compression Mode Command Transfer Sequences

The following chart provides basic commands in proper sequence for TIFF compression mode.

Table 11 Command sequences for TIFF Compression Mode

By document		1. Initial settings	1.1 Set mechanism sequence	ESC (R SN ESC 00H 00H 00H
			1.2 Initialize printer	ESC @
			1.3 Select graphics mode	ESC (G
			1.4 Set unit	ESC (U
		2. Printing method control	2.1 Turn unidirectional mode on/off	ESC U
			2.2 Select MicroWeave print mode	ESC (i
			2.3 Select dot size	ESC (e
		3. Set print format (single sheet)	3.1 Set page format	ESC (c
			3.2 Set Paper dimension	ESC (S
		4. Enter compression mode	4.1 Enter TIFF compressed mode	ESC . 2
By page	By raster	5. Set vertical position	5.1 Set relative vertical position	<MOVY>
		6. Transfer data	6.1 Select printing color	<COLR>
			6.2 Set relative horizontal position	<MOVX>
			6.3 Transfer raster graphics data Repeat above for each color	<XFER>
		7. Form feed	7.1 Exit TIFF compressed mode	<EXIT>
			7.2 Form feed	FF
		8. Terminate printing	8.1 Initialize printer	ESC @
			8.2 Set mechanism sequence	ESC (R LD ESC 00H 00H 00H

5.4 Roll Paper Mode Command Transfer Sequences

The following chart provides basic commands in proper sequence for the roll paper mode. It displays the page format setting utilized with the ESC (c command for a top margin 0 setting. Refer to the explanation of the ESC (c command for further information.

Table 12 Command sequences for Roll Paper Mode

Transfer cycle		Details of setting	Items set	Commands used
By document		1. Initial setting	1.1 Set mechanism sequence Set roll paper mode	ESC (R SN EX 06H 00H 00H 00H 00H 00H 05H 01H ESC 00H 00H 00H
			1.2 Initialize printer	ESC @
			1.3 Select graphics mode	ESC (G
			1.4 Set unit	ESC (U
		2. Printing method control	2.1 Turn unidirectional mode on/off	ESC U
			2.2 Select MicroWeave print mode	ESC (i
			2.3 Select dot size	ESC (e
			2.4 Set resolution of Raster mode	ESC (D
		3. Set print format	3.1 Set page format	ESC (C ESC (c
		4. Set top margin	4.1 Set vertical print position	ESC (v
By page	By raster	4. Set vertical position	5.1 Set vertical print position	ESC (v
			6.1 Set horizontal print position	ESC \ or ESC(/ or ESC $ or ESC ($
			6.2 Print raster graphics: repeat above for each color	ESC i
		7. Terminate printing	7.1 Initialize printer	ESC @
			7.2 Set mechanism sequence	ESC (R LD ESC 00H 00H 00H
			7.3 Paper Eject	FF

*** Constraint item of the parameter that designates it with ESC(C,ESC(c
ESC (C 02H 00H <n1> <n2>,ESC (c 04H 00H 00H 00H <m1> <m2> : n1=m1,n2=m2

CHAPTER 6 INIDIVIDUAL COMMAND SPECIFICATIONS

6.1 Line feed "LF"

Format:

ASCII	**LF**
Hex	0A
Decimal	10

Function:

1) Advances the printing position in the Y direction from the current one in the positive Y direction by an amount equal to the current line separation amount. Sets the printing position in the X direction to the starting point (the left margin position) on the X axis of the position management coordinate system.

2) If this commands sets the Y direction printing position into the non-printable region, then the page is ejected, the position management coordinate system is set to the next page, and the printing position is set to the origin on this new position management coordinate system.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The line advance amount is set by the ESC + commands.

The non-printable region is set by the ESC (c commands.

The line advance amount, the non-printable region, and the left margin position are reset to their initial states by the ESC @ and ESC (G commands.

6.2 Form feed “FF”

Format:

ASCII	**FF**
Hex	0C
Decimal	12

Function:

1) The contents of the print buffer are printed, the position management coordinate system is set to the next page, and the printing position is set to the origin on this new position management coordinate system.

In addition, if the next page does not exist, the paper is ejected.

2) With single sheet paper, this command is ignored if no paper is input.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The page length is set by the ESC (C commands.

The page length and the left margin position are reset to their initial states by the ESC @ and ESC (G commands.

6.3 Carriage return “CR”

Format:

ASCII	**CR**
Hex	0D
Decimal	13

Function:

1) The printing position in the X direction is set to the origin (the left margin) on the X axis of the position management coordinate system.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.4 Carriage return "ESC EM n"

Format:

ASCII	**ESC**	**EM**	**n**
Hex	1B	19	6E
Decimal	27	25	110

Function:

Sets controls for paper loading/ejecting

Range of Values for Parameters:

n=31H, 52H
(="1", "R")

Function:

1) Control of the CSF (cut sheet feeder) is performed as follows, according to the value of n:
   n=31H select bin 1
   n=52H eject paper
2) If n has any value other than the above, this command is ignored.
3) ESC EM R is only valid for paper which has been fed from the CSF. For any other paper, this command is ignored.
4) Bin selection setting is valid from the next time paper is fed.
5) With ESC EM R, the printing position in the X direction is set to the origin on the X axis.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)
None
Commands related in the direction of receiving an effect (Setting)
Returned to initial state by the ESC @ command.
Commands related in the direction of applying an effect (Operation)
None
Commands related in the direction of receiving an effect (Operation)
None

6.5 Set absolute horizontal print position "ESC $ nL nH"

Format:

ASCII	**ESC**	**$**	**nL**	**nH**
Hex	1B	24	nL	nH
Decimal	27	36	nL	nH

Range of Values for Parameters: $0 \leq nL \leq 255$
$0 \leq nH \leq 127$

Function:

1) The printing position in the X direction is set to a position spaced in the positive direction by (256 x nH + nL) x (absolute horizontal position setting units) inches from the origin (the left margin position) on the X axis of the position management coordinate system.

2) If the left margin position + (256 x nH + nL) x (absolute horizontal position setting units) is past the right margin position, then this command is ignored.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

Set the absolute horizontal units with the ESC (U command.

Reset the absolute horizontal position units with the ESC @ and ESC (G commands.

Return to the initial state using the ESC @ command.

6.6 Set absolute horizontal print position "ESC ($ nL nH m1 m2 m3 m4"

Format:

ASCII	**ESC**	**$**	**nL**	**nH**	**m1**	**m2**	**m3**	**m4**
Hex	1B	24	nL	nH	m1	m2	m3	m4
Decimal	27	36	nL	nH	m1	m2	m3	m4

Range of Values for Parameters:

nL=04H, nH=00H

0 <= (m4*1000000H +m3*10000H + m2*100H + m1)) × (absolute horizontal position setting units)inch <= 11904/1440inch

Function:

1) The printing position in the X direction is set to a position spaced in the positive direction by ((m4 × 256 × 256 × 256 +m3 × 256 × 256 + m2 × 256 + m1) x (absolute horizontal position setting units) inches from the origin (the left margin position) on the X axis of the position management coordinate system.

If the left margin position + (m4 × 256 × 256 × 256 +m3 × 256 × 256 + m2 × 256 + m1) x (absolute horizontal position setting units) is past the right margin position, then this command is ignored.

This Command is effective only at the time of the graphic mode.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The absolute horizontal position setting units are set by the ESC (U command.

The absolute horizontal position setting units are reset to the initial state by the ESC @ and ESC (G commands.

The initial state is returned to by the ESC @ command.

6.7 Set page length in defined unit "ESC (C nL nH mL mH"

Format:

ASCII	**ESC**	**(**	**C**	**nL**	**nH**	**mL**	**mH**
Hex	1B	28	43	nL	nH	mL	mH
Decimal	27	40	67	nL	nH	mL	mH

Range of Values for Parameters:

nL=02H, nH=00H

$0 < (((mH \times 256) + mL) \times (\text{page management units})) \leq 44$ inches

Function:

1) The page length is set to (mH x 256 + mL) x (page management units) inches.
2) If the values of mH and mL are outside the above ranges, this command is ignored.
3) The page management coordinate system and the position management coordinate system are set by taking the present Y direction printing position as the origin upon the Y axis. The origin on the X axis is not changed at this time.
4) The top margin position is set to the origin on the Y axis, and the bottom margin position is set spaced in the positive direction by the page length from the top margin position.

Initial State: The page length is set to 22 inches.

Related Commands:

Commands related in the direction of applying an effect (Setting)

The top and bottom margin position settings set by the ESC (c commands are cleared.

Commands related in the direction of receiving an effect (Setting)

The page length, the page management units, and the top and bottom margin positions are reset to their initial states by the ESC @ and ESC (G commands.

Commands related in the direction of applying an effect (Operation)

New page processing by the FF command is affected (the amount of movement is changed).

New lines generated by the LF command which go outside the printable area are affected.

Processing by the ESC (v command is affected.

Processing by the ESC (V command is affected.

Commands related in the direction of receiving an effect (Operation)

The page management unit is set by the ESC (U command.

6.8 Set page length in defined unit(extended) "ESC (C nL nH m1 m2 m3 m4"

Format:

ASCII	**ESC**	**(**	**C**	**nL**	**nH**	**m1**	**m2**	**m3**	**m4**
Hex	1B	28	43	nL	nH	m1	m2	m3	m4
Decimal	27	40	67	nL	nH	m1	m2	m3	m4

Range of Values for Parameters:

nL=04H, nH=00H

0<=(m4*1000000H+m3*10000H+m2*100H+m1) *1440/(defined unit) <=1FFFFFFFH

Function:

1) The page length is set to (m4*256*256*256 +m3*256*256 + m2*256 + m1) x (page management units) inches.

The page management coordinate system and the position management coordinate system are set by taking the present Y direction printing position as the origin upon the Y axis. The origin on the X axis is not changed at this time.

The top margin position is set to the origin on the Y axis, and the bottom margin position is set spaced in the positive direction by the page length from the top margin position.

This Command is effective only at the time of the graphic mode.

Initial State:

The page length is set to 22 inches.

Related Commands:

Commands related in the direction of applying an effect (Setting)

The top and bottom margin position settings set by the ESC (c commands are cleared.

Commands related in the direction of receiving an effect (Setting)

The page length, the page management units, and the top and bottom margin positions are reset to their initial states by the ESC @ and ESC (G commands.

Commands related in the direction of applying an effect (Operation)

New page processing by the FF command is affected (the amount of movement is changed).

New lines generated by the LF command which go outside the printable area are affected.

Processing by the ESC (v command is affected.

Processing by the ESC (V command is affected.

Commands related in the direction of receiving an effect (Operation)

The page management unit is set by the ESC (U command.

6.9 Select graphics mode "ESC (G nL nH m"

Format:

ASCII	**ESC**	**(**	**G**	**nL**	**nH**	**m**
Hex	1B	28	47	nL	nH	m
Decimal	27	40	71	nL	nH	m

Range of Values for Parameters:

nL=01H, nH=00H

m=01H or 31H

Function:

1) Shifts to graphics mode.
2) If m has any value other than the above, this command is ignored.
3) Printing of lines up to the present line is started, and the printer waits until the printing is completed.
4) The various settings are the same as when the power is turned on.
5) The page management coordinate system and the position management coordinate system are set by taking the printing position in the Y direction at the time of setting as the origin upon the Y axis.
6) The printing position in the X direction is set to the origin upon the X axis.
7) The microweave print mode selection command is made effective.

Initial State:

Is character mode.

Related Commands:

Commands related in the direction of applying an effect (Setting)

The character mode selection made by the ESC @ command is changed.

Commands related in the direction of receiving an effect (Setting)

The graphics mode is canceled by the ESC @ command.

Commands related in the direction of applying an effect (Operation)

In graphics mode, only the following commands are valid:

LF	ESC (C
FF	
CR	ESC (U
ESC EM	ESC (V
ESC.	ESC (r
ESC +	ESC (v
ESC @	ESC \
ESC (c	ESC $
ESC (i	ESC r
ESC (K	ESC U
ESC (e	ESC (\

Commands related in the direction of receiving an effect (Operation)

None

6.10 Set unit "ESC (U nL nH m"

Format:

ASCII	**ESC**	**(**	**U**	**nL**	**nH**	**m**
Hex	1B	28	55	nL	nH	m
Decimal	27	40	85	nL	nH	m

Range of Values for Parameters:

nL=01H, nH=00H

m=05H, 0AH, 14H, 1EH, 28H, 32H, 3CH (units 1/3600 inch)
(=5, 10, 20, 30, 40, 50, 60)

Function:

1) Set the following standard units in units of 1/3600 inch:
   Relative horizontal position setting units
   Absolute horizontal position setting units
   Relative vertical position setting units
   Absolute vertical position setting units
   Page management units
2) If nL or nH has a value other than the above, then the following (256 x nH + nL) bytes of data are received, and this command terminates.
3) If m has a value other than the above, this command is ignored.

Initial State:

Page management units: 1/360 inch
Relative horizontal position setting units: 1/180 inch units
Absolute horizontal position setting units: 1/60 inch units
Relative vertical position setting units: 1/360 inch units
Absolute vertical position setting units: 1/360 inch units

Related Commands:

Commands related in the direction of applying an effect (Setting)
None
Commands related in the direction of receiving an effect (Setting)
None
Commands related in the direction of applying an effect (Operation)
The units for the relative horizontal position setting by the ESC \ command are set.
The units for the absolute horizontal position setting by the ESC $ command are set.
The units for the relative vertical position setting by the ESC (v command are set.
The units for the absolute vertical position setting by the ESC (V command are set.
The units for the "unit" unit page length specification by the ESC (C command are set.
The units for the page format specification by the ESC (c command are set.
Commands related in the direction of receiving an effect (Operation)
The initial state is returned to by the ESC @ command.

6.11 Set unit(extended) "ESC (U nL nH P V H mL mH"

Format:

ASCII	**ESC**	**(**	**U**	**nH**	**P**	**V**	**H**	**mL**	**mH**
Hex	1B	28	55	nH	P	V	H	mL	mH
Decimal	27	40	85	nH	P	V	H	mL	mH

Range of Values for Parameters:

nL=05H, nH=00H
P=(mH*256 + mL) = 90, 120, 180, 360, 720, 1440
V=(mH*256 + mL) = 90, 120, 180, 360, 720, 1440
H=(mH*256 + mL) = 90, 120, 180, 360, 720, 1440

Function:

1) Set the following standard units in units of b/(mH*256+mL) inch:
   The H of parameter is horizontal position setting units
   The V of parameter is vertical position setting units
   The P of parameter is page management units
2) This Command is effective only at the time of the graphic mode.

Initial State:

Page management units: 1/360 inch
Relative horizontal position setting units: 1/180 inch units
Absolute horizontal position setting units: 1/60 inch units
Relative vertical position setting units: 1/360 inch units
Absolute vertical position setting units: 1/360 inch units

Related Commands:

Commands related in the direction of applying an effect (Setting)
None
Commands related in the direction of receiving an effect (Setting)
None
Commands related in the direction of applying an effect (Operation)
The units for the relative horizontal position setting by the ESC \,ESC(/ command are set.
The units for the absolute horizontal position setting by the ESC $,ESC($ command are set.
The units for the relative vertical position setting by the ESC (v command are set.
The units for the absolute vertical position setting by the ESC (V command are set.
The units for the "unit" unit page length specification by the ESC (C command are set.
The units for the page format specification by the ESC (c command are set.
The units for the paper dimension specification by the ESC (S command are set.
Commands related in the direction of receiving an effect (Operation)
The initial state is returned to by the ESC @ command.

6.12 Set absolute vertical print position "ESC (V nL nH mL mH"

Format:

ASCII	**ESC**	**(**	**V**	**nL**	**nH**	**mL**	**mH**
Hex	1B	28	32	nL	nH	mL	mH
Decimal	27	40	86	nL	nH	mL	mH

Range of Values for Parameters:

nL=02H, nH=00H

(Vertical position set) = (mL + mH x 256) x (units set)

Function:

1) The printing position in the Y direction is set to a position spaced in the positive direction by (256 x mH + mL) x (the set absolute vertical position unit) inches from the origin upon the Y axis of the position management coordinate system.

2) If the printing position in the Y direction has been set by this command to a non-printable region, then the paper is ejected, the position management coordinate system is set to the next page, and the printing position in the Y direction is reset to the origin upon the Y axis of the new position management coordinate system.

3) Setting in the negative direction is ignored.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The absolute vertical position unit are set by the ESC(U commands.

The range of impossible printing are set by the ESC(c, ESC N, ESC O commands.

The relative vertical position setting units, the non-printable region, and the printing position in the Y direction are reset to their initial states by the ESC @ and ESC (G commands.

6.13 Set absolute vertical print position(extended) "ESC (V nL nH m1 m2 m3 m4"

Format:

ASCII	**ESC**	**(**	**V**	**nL**	**nH**	**m1**	**m2**	**m3**	**m4**
Hex	1B	28	32	nL	nH	m1	m2	m3	m4
Decimal	27	40	86	nL	nH	m1	m2	m3	m4

Range of Values for Parameters:

nL=04H, nH=00H

(Vertical position set) = (mL + mH x 256) x (units set)

0 <= (m4*1000000H+ m3*10000H+m2*100H+m1)) × (the set absolute vertical position unit)inch <= 1FFFFFFFH/1440 inch

Function:

1) The printing position in the Y direction is set to a position spaced in the positive direction by (m4*256*256*256 +m3*256*256 + m2*256 + m1) x (the set absolute vertical position unit) inches from the origin upon the Y axis of the position management coordinate system.

2) If the printing position in the Y direction has been set by this command to a non-printable region, then the paper is ejected, the position management coordinate system is set to the next page, and the printing position in the Y direction is reset to the origin upon the Y axis of the new position management coordinate system.

3) Setting in the negative direction is ignored.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The absolute vertical position unit are set by the ESC(U commands.

The range of impossible printing are set by the ESC(c, ESC N, ESC O commands.

The relative vertical position setting units, the non-printable region, and the printing position in the Y direction are reset to their initial states by the ESC @ and ESC (G commands.

6.14 Set page format "ESC (c nL nH tL tH bL bH"

Format:

ASCII	**ESC**	**(**	**c**	**nL**	**nH**	**tL**	**tH**	**bL**	**bH**
Hex	1B	28	63	nL	nH	tL	tH	bL	bH
Decimal	27	40	99	nL	nH	tL	tH	bL	bH

Range of Values for Parameters:

nL=04H, nH =00H

((tH x 256) + tL) < ((bH x 256) + bL)

((bH x 256) + bL) x (page management units) ≤ 44 inches

Function:

1) The position management coordinate system is set by taking as its origin on the Y axis a position spaced in the positive direction by (256 x tH + tL) x (page management units) inches from the origin on the Y axis of the page management coordinate system. Further, the bottom margin is set at a position spaced in the positive direction by (256 x bH + bL) x (page management units) inches from the origin on the Y axis of the position management coordinate system.
2) The printing position in the Y direction is shifted to the origin of the position management coordinate system. At this time, the origin on the X axis is not changed.
3) If the distance from the origin on the Y axis of the position management coordinate system to the bottom margin position is greater than the page length, then this distance from the origin on the Y axis to the bottom margin position is set as the new page length.
4) If the paper which is inserted is cut sheet paper, then the distance from the top margin position to the bottom margin position is set as the page length.

Initial State:

The top margin position is set to 0.33 inches .
The bottom margin position is set to the page length.
The page length is set to 22 inches.

Related Commands:

Commands related in the direction of applying an effect (Setting)

The set page length is changed by the ESC (C commands.

Commands related in the direction of receiving an effect (Setting)

The top margin and the bottom margin are set by the ESC commands.
The page length and the bottom margin position are returned to their initial states by the ESC @ and the ESC (G commands.

Commands related in the direction of applying an effect (Operation)

New page processing by the FF command is affected (the amount of movement is changed).
New lines generated by the LF command which go outside the printable area are affected.
Processing by the ESC (v command is affected.
Processing by the ESC (V command is affected.

Commands related in the direction of receiving an effect (Operation)

The page management units are set by the ESC (U command.

6.15 Set page format(extended) "ESC (c nL nH t1 t2 t3 t4 b1 b2 b3 b4"

Format:

ASCII	**ESC**	**(**	**c**	**nL**	**nH**	**t1**	**t2**	**t3**	**b1**	**b2**	**b3**	**b4**
Hex	1B	28	63	nL	nH	t1	t2	t3	b1	b2	b3	b4
Decimal	27	40	99	nL	nH	t1	t2	t3	b1	b2	b3	b4

Range of Values for Parameters:

nL=08H, nH =00H

0t1,t2,t3,t4,b1,b2,b3,b4255

(t4*1000000H + t3*10000H + t2*100H + t1)<(b4*1000000H + b3*10000H + b2*100H + b1)<= 1FFFFFFFH/1440 inch

Function:

1) The position management coordinate system is set by taking as its origin on the Y axis a position spaced in the positive direction by (t4*256*256*256 + t3*256*256 + t2*256 + t1) x (page management units) inches from the origin on the Y axis of the page management coordinate system. Further, the bottom margin is set at a position spaced in the positive direction by (b4*256*256*256 + b3*256*256 + b2*256 + b1) x (page management units) inches from the origin on the Y axis of the position management coordinate system.
2) The printing position in the Y direction is shifted to the origin of the position management coordinate system. At this time, the origin on the X axis is not changed.
3) If the distance from the origin on the Y axis of the position management coordinate system to the bottom margin position is greater than the page length, then this distance from the origin on the Y axis to the bottom margin position is set as the new page length.
   If the paper which is inserted is cut sheet paper, then the distance from the top margin position to the bottom margin position is set as the page length.
   This Command is effective only at the time of the graphic mode.

Initial State:

The top margin position is set to 0.33 inches .
The bottom margin position is set to the page length.
The page length is set to 22 inches.

Related Commands:

Commands related in the direction of applying an effect (Setting)

The set page length is changed by the ESC (C commands.

Commands related in the direction of receiving an effect (Setting)

The top margin and the bottom margin are set by the ESC commands.
The page length and the bottom margin position are returned to their initial states by the ESC @ and the ESC (G commands.

Commands related in the direction of applying an effect (Operation)

New page processing by the FF command is affected (the amount of movement is changed).

New lines generated by the LF command which go outside the printable area are affected.

Processing by the ESC (v command is affected.

Processing by the ESC (V command is affected.

Commands related in the direction of receiving an effect (Operation)

The page management units are set by the ESC (U command.

6.16 Select MicroWeave print mode "ESC (i"

Format:

ASCII	**ESC**	**(**	**i**	**01H**	**00H**	**n**
Hex	1B	28	63	01	00	n
Decimal	27	40	105	1	0	n

Range of Values for Parameters:

n=00H, 01H, 30H, 31H

Function:

1) Selects / deselects the MicroWeave mode.
   n=0 or 30H: deselects
   n=1 or 31H: selects

Initial State:

Non-MicroWeave mode

Related Commands:

Commands related in the direction of applying an effect (Setting)

Changes the non-selected state set by the ESC (G command.
Changes the non-selected state set by the ESC @ command.

Commands related in the direction of receiving an effect (Setting)

The ESC (G command sets the non-selected state.
The ESC @ command sets the non-selected state.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.17 Select dot size "ESC (e nL nH m d"

Format:

ASCII	**ESC**	**(**	**e**	**nL**	**nH**	**m**	**d**
Hex	1B	28	65	nL	nH	m	d
Decimal	27	40	101	nL	nH	m	d

Range of Values for Parameters:

nL=02H, nH=00H

m=00H, d=00H, 01H, 02H, 03H, 04H, 10H

Function:

1) The dot size is set according to the value of d.
2) The parameter has the following meaning:
   d=00H: default
   for a 360 dpi raster, Normal x3dot
   ……for a 720 dpi raster, Normal x1,2 dot
3) The defaults are specific to each model of printer.
4) Dot control is valid irrespective of printing mode and printing density.
5) If the dot size is changed part way through a page, the results are unpredictable.
6) If n has any value other than the above, this command is ignored.

Initial State: Default

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

The default is set by the ESC @ command.

The default is set by the ESC (G command.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.18 Select color "ESC (r nL nH m n"

Format:

ASCII	**ESC**	**(**	**r**	**nL**	**nH**	**m**	**n**
Hex	1B	28	72	nL	nH	m	n
Decimal	27	40	114	nL	nH	m	n

Range of Values for Parameters:

nL=02H, nH=00H

m=00H,01H

n=00H, 01H, 02H, 04H

Function:

1) The print color is selected according to the values of m and n.

m	n	Print color
00H	00H	Black
00H	01H	Magenta
00H	02H	Cyan
00H	04H	Yellow
00H	01H	Light Magenta
00H	02H	Light Cyan

2) If either m or n has a value other than those above, this command is ignored.

3) This command is only effective in graphics mode.

Initial State: Black is selected.

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

The ESC @ command selects black.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The ESC (G command sets graphics mode.

6.19 Set relative vertical print position "ESC (v nL nH mL mH"

Format:

ASCII	**ESC**	**(**	**v**	**nL**	**nH**	**mL**	**mH**
Hex	1B	28	76	nL	nH	mL	mH
Decimal	27	40	118	nL	nH	mL	mH

Range of Values for Parameters:

nL=02H, nH=00H

(Relative vertical set position) = (mL + mH x 256) x (set units)

Function:

1) The printing position in the Y direction is set to a position spaced in the positive direction from the present Y printing position in the Y direction by (256 x mH + mL) x (relative vertical position set unit) inches.
2) If the position set by this command is higher than the top margin position on the current page, this command is ignored.
3) If the printing position in the Y direction has been set by this command to a non-printable region, then the position management coordinate system is set to the next page, and the printing position in the Y direction is reset to the origin upon the Y axis of the new position management coordinate system.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The relative vertical position setting units are set by the ESC (U command.
The non-printable region is set by the ESC (c commands.
The relative vertical position setting units, the non-printable region, and the printing position in the Y direction are reset to their initial states by the ESC @ and ESC (G commands.

6.20 Set relative vertical print position "ESC (v nL nH m1 m2 m3 m4"

Format:

ASCII	**ESC**	**(**	**v**	**nL**	**nH**	**m1**	**m2**	**m3**	**m4**
Hex	1B	28	76	nL	nH	m1	m2	m3	m4
Decimal	27	40	118	nL	nH	m1	m2	m3	m4

Range of Values for Parameters:

nL=04H, nH=00H

0 <= (m4*1000000H +m3*10000H + m2*10H + m1)) × (relative vertical position set unit)inch <= 1FFFFFFFH/1440 inch

Function:

1) The printing position in the Y direction is set to a position spaced in the positive direction from the present Y printing position in the Y direction by (m4*256*256*256 + m3*256*256 + m2*256 + m1) x (relative vertical position set unit) inches.
   Setting in theystem.
2) If the position set by this command is higher than the top margin position on the current page, this command is ignored.
3) If the printing position in the Y direction has been set by this command to a non-printable region, then the position management coordinate system is set to the next page, and the printing position in the Y direction is reset to the origin upon the Y axis of the new position management coordinate system.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The relative vertical position setting units are set by the ESC (U command.
The non-printable region is set by the ESC (c commands.
The relative vertical position setting units, the non-printable region, and the printing position in the Y direction are reset to their initial states by the ESC @ and ESC (G commands.

6.21 Print raster graphics "ESC . c v h m nL nH d1...dk (c=0,1)"

Format:

ASCII	**ESC**	**.**	**c**	**v**	**h**	**m**	**nL**	**nH**	**dl…dk**
Hex	1B	2E	c	v	h	m	nL	nH	dl…dk
Decimal	27	46	c	v	h	m	nL	nH	dl…dk

Range of Values for Parameters:

c=0, 1, 2 (for the cases c=2 as in the separate frame)
v=5, 10, 20, 40 (v/3600 dpi)
h=5, 10, 20 (h/3600 dpi)
$0 \le nL \le 255$
$0 \le nH \le 127$
$0 \le d \le 255$
m=1, 8, 24, 47,48 (color mode)
1, 8, 24, 72,144 (black mode)

Function:

1) If c has any value other than the above, this command terminates at the instant that c is processed.

If v has any value other than the above, or if h has any value other than the above, this command is ignored.

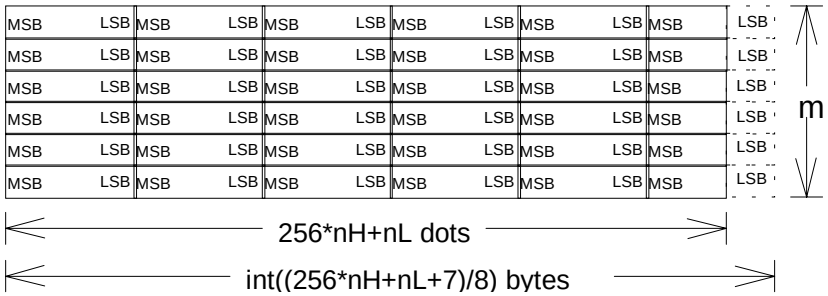
2) The actual image pattern is generated according to a raster method determined by the following parameters:

c: printing mode
00H: full graphics mode (non-compressed mode)
01H: run-length encoded compression mode
v: printing density in the vertical direction v/3600 (dpi)
h: printing density in the horizontal direction h/3600 (dpi)
m: number of dots in the vertical direction
nL, nH: number of dots in the horizontal direction 256 x nH + nL (dots)
k: number of items of data = m x int((nH x 256 + nL + 7)/8)
d: data

Full graphics mode (non-compressed mode)

In full graphics mode, all of the data is transferred in raster format. At this time, for the last data byte on the right, the portion up until the number of dots in the horizontal direction is valid.

The total amount of data sent is k = int((256 x nH + nL + 7)/8) x m bytes.



Run-length encoding compression mode

In run-length encoding compression mode, the data is transferred in the following format.
The data to be printed is always transferred in the format (counter) + (data).
If 0 ≤ counter ≤ 127, then the data following the counter is non-compressed data, and the length of the compressed data is (counter)+1 bytes.
If 128 ≤ counter ≤ 255, then the data following the counter is one byte of compressed data, and the compressed data is to be considered as being repeated 257-(counter) times.

3) The printing position in the X direction is set to a position spaced in the positive direction from the present printing position in the X direction by (256 x nH + nL) x h/3600 inches.
If this command specifies a position in the non-printable area (right margin), the right margin position is set once again to the X direction print position.

4) If image data upon a non-printable region is designated, this designated data is ignored.

The combinations of printing density and command parameters which can be set with the raster graphics of this printer are shown in the following tables:

0. Case of microweave mode off

Mode	Parameter				ESC(e *3	Comment
(V x H)	c	v	h	m	n2	
120x120	0/1	30	30	48	00h	expanded to 120x360 by the printer
120x360	0/1	30	10	47/48	00h	
120x720	0/1	30	5	47/48	00h	
180x180	0/1/2	20	20	1/8/24	00h	*1 *2
180x360	0/1	20	10	1/8/24	00h	*2
360x360	0/1/2	10	10	1/8/24	00h	*1 *2

1. Case of microweave mode on

Mode	Parameter				ESC(e *3	Comment
(V x H)	c	v	h	m	n2	
360x360	0/1/2	10	10	1	00h	
720x720	0/1/2	5	5	1	00h	2pass printing

*1 When mode is selected as TIFF(c=2), only m=1 is allowed.
*2 The parameter m=1 is recommended.
*3 In the case that the ESC . command is used only MultiShot Dot (ESC (e 2 0 0 0) is effective.

Initial State:

Character mode

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.22 Enter TIFF compressed mode “ESC . 2 v h 1 0 0”

Format:

ASCII	**ESC**	**.**	**2**	**v**	**h**	**01H**	**00H**	**00H**
Hex	1B	2E	32	v	h	01	00	00
Decimal	27	46	50	v	h	1	0	0

Range of Values for Parameters:

v=5, 10, 20 (v/3600 dpi)

h=5, 10, 20 (h/3600 dpi)

Function:

1) TIFF ver. 4.0 format raster graphics compression mode is set from this command until the <EXIT> command.
2) This supports the TIFF ver. 4.0 compression method.
3) Each of the parameters has the following meaning:
   v: printing density in the vertical direction v/3600 (dpi)
   h: printing density in the horizontal direction h/3600 (dpi)
   Only the following combinations of printing densities in the vertical direction and in the horizontal direction are permitted:

Vertical direction (dpi)	Horizontal direction (dpi)
180	180
180	360
360	360
720	720

4) The commands which are valid in this mode are the following:
   <XFER>: transfer graphics image data
   <MOVX>: set horizontal position
   <MOVY>: set vertical position
   <COLR>: set color
   <CR>: set printing position in the X direction to the left margin position
   <EXIT>: cancel compressed format mode
   <MOVXBYTE>:make the unit of horizontal direction setting into byte units
   <MOVXDOT>:make the unit of horizontal direction setting into dot units
5) The units for the <MOVX> and <MOVY> commands are the units set by the ESC (U command.
6) The printing position in the X direction is set to the origin upon the X axis.

Initial State:

Character mode

Related Commands:

Commands related in the direction of applying an effect (Setting)

The full graphics mode set by the ESC (G command is switched to the run-length encoding compression mode.

Commands related in the direction of receiving an effect (Setting)

The TIFF ver. 4.0 compression mode is canceled by the EXIT command.

Commands related in the direction of applying an effect (Operation)

Only the following commands are valid:

XFER	CR
MOVX	EXIT
MOVY	MOVXBYTE
COLR	MOVXDOT

Commands related in the direction of receiving an effect (Operation)

The "unit" units are set by the ESC (U command.

6.23 Set paper dimension “ESC (S nL nH w1 w2 w3 w4 l1 l2 l3 l4”

Format:

ASCII	**ESC**	**(**	**S**	**nL**	**nH**	**w1 w2 w3 w4 11 12 13 14**
Hex	1B	28	53	nL	nH	w1 w2 w3 w4 11 12 13 14
Decimal	27	40	83	nL	nH	w1 w2 w3 w4 11 12 13 14

Range of Values for Parameters:

nL=04H, nH=00H

0 <= (w4*1000000H + w3*10000H + w2*100H + w1)*1440/(defined unit) <= 7FFFFFFFH

0 <= (l4*1000000H + l3*10000H + l2*100H + l1)*1440/(defined unit) <= 7FFFFFFFH

Function:

1) Set paper length (from top-edge to bottom-edge) and paper width (from left-edge to right-edge) in the defined unit.
2) This command is used to expand the bottom-margin (3mm) of printer.
3) Paper length and width is defined by following formula:
   physical paper length = (l4*1000000H + l3*10000H + l2*100H + l1) * (defined unit)
   physical paper width = (w4*1000000H + w3*10000H + w2*100H + w1) * (defined unit)
4) This command can be used only during graphics mode, entered by sending the ESC (G command.
5) This command is effective when defined paper length is the same as physical paper length measured by the printer.
6) The image from a remainder page manager is deleted from the location of a form piece, in the case that it is shorter than it is long the form that was designated with this command although it is long a physics form.
7) The paper width is ignored in this printer.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

The page control setting unit is set by the ESC (U command.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The initial state is returned to by the ESC @ command.

The initial state is returned to by the ESC(G command.

6.24 Set resolution of Raster image "ESC (D nL nH rL rH v h"

Format:

ASCII	**ESC**	**(**	**D**	**nL**	**nH**	**rL**	**rH**	**v**	**h**
Hex	1B	28	44	nL	nH	rL	rH	v	h
Decimal	27	40	68	nL	nH	rL	rH	v	h

Range of Values for Parameters:

nL=04H, nH=00H

0 <= v <= 127

0 <= h <=127

Function:

1) Set resolution of raster image (ESC i).
   Vertical resolution : v / (rH*256 + rL) inch
   Horizontal resolution : h / (rH*256 + rL) inch
2) Available resolution is
   1/120, 1/180, 1/360, 1/720, 1/1440 inch
3) Following parameters are supported.
4)

0. Case of microweave mode off

Mode (V x H)	ESC (D		ESC i	Comment
	v / r	h / r	mH*256+ mL	
120x120	12/1440	12/1440	48	expanded to 120x360 by the printer
120x360	12/1440	4/1440	47/48	
180x180	8/1440	8/1440	1/8/24	*1
180x360	8/1440	4/1440	1/8/24	*1
360x360	4/1440	4/1440	1/8/24	*1

1. Case of microweave mode on

Mode (V x H)	ESC (D		ESC i	Comment
	v / r	h / r	mH*256+ mL	
360x360	4/1440	4/1440	1	

*1 The parameter (mH*256+mL)=1 is recommended.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

The Resolution set of Raster image exert the influence on the processing by the ESC i command .

Commands related in the direction of receiving an effect (Setting)

The Resolution setting of Raster image is returned to this initial states by the ESC @ and the ESC (G commands.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.25 Transfer Raster image "ESC i r c b nL nH mL mH d1.....dk"

Format:

ASCII	**ESC**	**I**	**r**	**c**	**b**	**nL**	**nH**	**mL**	**mH**	**d1**	**d2…dk**
Hex	1B	69	r	c	b	nL	nH	mL	mH	d1	d2…dk
Decimal	27	105	r	c	b	nL	nH	mL	mH	d1	d2…dk

Range of Values for Parameters:

r = 00H, 01H, 02H, 04H
c = 00H, 01H
b = 01H, 02H
0000H <= (nH*256 + nL) <= 7FFFH
0001H <= (mH*256 + mL) <= 7FFFH

Function:

1) Prints dot graphics in raster format.
2) Parameters are used as described below:

r : color of image (00H:black, 01H:magenta, 02H:cyan, 04H:yellow)
c : compress method (00H:noncompressed, 01H:Run Length Encoding)
b : bit length of each pixel (01H:1bit/pixel (for Micro, Normalx1, Normalx2, Normalx4 dot)
nL, nH: Horizontal byte count, according to the following formula:
nH = INT(horizontal byte count / 256)
= INT(((horizontal dot count) * (bit lenght of each pixel) + 7) / 8) /256
nL = MOD(horizontal byte count / 256)
= MOD(((horizontal dot count) * (bit lenght of each pixel) + 7) / 8) /256
mL, mH: Vertical dot count (rows of dot graphics), according to the following formula:
mH = INT(vertical dot count / 256)
mL = MOD(vertical dot count / 256)
k : Total numbers of data bytes, accoriding to the following formula:
k = (nH*256 + nL) * (mH*256 + mL)

Initial State: -

6.26 Initialize printer “ESC @”

Format:

ASCII	**ESC**	**@**
Hex	1B	40
Decimal	27	64

Range of Values for Parameters: -

Function:

1) The various settings are returned to their initial values.
2) The page management coordinate system and the position management coordinate system are set by taking the origin upon the Y axis as the present printing position on the Y axis.
3) The present printing position on the X axis is set to the origin upon the X axis.
4) The text mode is selected.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

The settings for all commands are returned to their initial states.

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.27 Turn unidirectional mode on/off "ESC U n"

Format:

ASCII	**ESC**	**U**	**n**
Hex	1B	55	n
Decimal	27	85	n

Range of Values for Parameters:

n=00H, 01H, 02H, 30H, 31H, 32H

Function:

1) The printing direction is selected according to the value of n in the following manner:
   - n=00H or 30H: selects bi-directional printing
   - n=01H or 31H: selects unidirectional printing
   - n=02H or 32H: selects automatic printing direction control
2) If n has any value other than the above, this command is ignored.

Initial State:

Bi-directional printing

Related Commands:

Commands related in the direction of applying an effect (Setting)

Initialization carried out by the ESC @ command is cancelled.

Commands related in the direction of receiving an effect (Setting)

Returned to its initial state by the ESC @ command.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.28 Set relative horizontal print position "ESC \ nL nH"

Format:

ASCII	**ESC**	\	**nL**	**nH**
Hex	1B	5C	nL	nH
Decimal	27	92	nL	nH

Range of Values for Parameters:

(nL + 256 x nH) x (set units) inches

Function:

1) If bit 6 of nH is 1, this is taken as meaning that a negative value has been set, and it is considered that the MSB of nH is 1. Negative values are expressed in two's complement.
2) The printing position in the X direction is set to a position spaced in the positive direction from the present printing position in the X direction by (256 x nH + nL) x (the set relative horizontal position setting unit).
   Set the defined unit with the ESC (U command.
   The default defined unit for this command is 1/180inch.
3) If the position setting due to this command is within the non-printable region, it is ignored. However, it is possible to shift to a position on the right margin position.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The relative horizontal position setting units are set by the ESC (U command.
The relative horizontal position setting units are reset to the initial state by the ESC @ and the ESC (G command.

6.29 Set relative horizontal print position "ESC (/ nL nH n1 n2 m1 m2"

Format:

ASCII	**ESC**	**(**	**/**	**nL**	**nH**	**n1**	**n2**	**m1**	**m2**
Hex	1B	28	2F	nL	nH	n1	n2	m1	m2
Decimal	27	40	47	nL	nH	n1	n2	m1	m2

Range of Values for Parameters:

nL=04H, nH=00H

0 <= (m4*1000000H +m3*10000H + m2*100 + m1)) × (relative horizontal print position set unit)inch <= 11904/1440inch or

If bit 7 of m4 is 1,this is taken to mean that a negative value has been set.

Function:

1) If bit 7 of m4 is 1, this is taken as meaning that a negative value has been set. Negative values are expressed in two's complement.
2) The printing position in the X direction is set to a position spaced in the positive direction from the present printing position in the X direction by (m4 × 256 × 256 × 256 +m3 × 256 × 256 + m2 × 256 + m1) x (the set relative horizontal position setting unit).
   Set the defined unit with the ESC (U command.
   The default defined unit for this command is 1/60inch.
   If the position setting due to this command is within the non-printable region, it is ignored. However, it is possible to shift to a position on the right margin position.
   This command is only effective in graphics mode.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.30 Select printing color “ESC r n”

Format:

ASCII	**ESC**	**r**	**n**
Hex	1B	72	n
Decimal	27	114	n

Range of Values for Parameters:

$00H \leq n \leq 06H$

Function:

1) The printing color is selected according to the value of n, as follows:
   if n=0: black
   if n=1: magenta
   if n=2: cyan
   if n=4: yellow
2) If n has a value other than the above, this command is ignored.

Initial State:

Black selected.

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

The ESC @ command selects black.

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.31 Extended Raster Graphics Specific Commands-Binaray Mode Commands for"ESC .2"

Format:

<xxxxxxxx>B (Command byte)

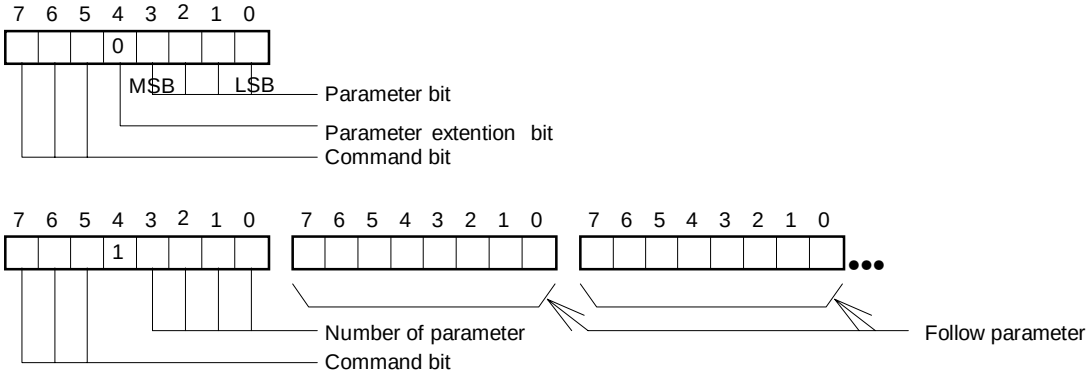
Range of Values for Parameters: -

Function:

1) The internal commands fall into two groups.
   First group: Group of commands in which the parameter is embedded in the command byte:
   - XFER
   - MOVX
   - MOVY
   - COLR

   Second group: Group of commands in which the parameters are not embedded in the command byte:
   - CLR
   - CR
   - EXIT
   - MOVXBYTE
   - MOVXDOT

2) The command byte has the following meaning:
   First group (parameter embedded type) command format



* If the three most significant bits of the command byte are not all 1, this indicates the first group.

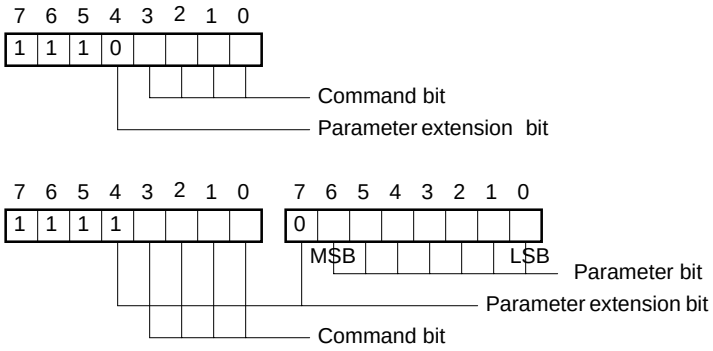
* The command is indicated by the three most significant bits:

<XFER>: 001xxxxxB
<MOVX>: 010xxxxxB
<MOVY>: 011xxxxxB
<COLR>: 100xxxxxB

* The fourth bit is the bit for parameter extension. When this bit is 0, this means that the parameter(s) embedded in the command byte are the command parameters just as they stand, while when this bit is 1, this means that the parameter embedded in the command byte is the number of subsequent parameter bytes.
The <XFER> command is an exception, and, only for this command, the parameter means the subsequent number of bytes of the image data after compression.

* The remaining four least significant bits are the parameter embedded in the command byte (unsigned).
  If the parameter has a value of from 0 to 15, it can be embedded in the command byte.
  When the parameter extension bit is 1, parameter bytes follow up to a maximum of 15 bytes.

  Second group (parameters not embedded type) command format



* If the three most significant bits of the command byte are all 1, this indicates the second group.

* The command type is indicated by the four least significant bits:

<CLR>: 11100001B
<CR>: 11100010B
<EXIT>: 11100011B
<MOVXBYTE>: 11100100B
<MOVXDOT>: 11100101B

* The fourth bit is the bit for future parameter extension. When this bit is 0, this means that there are no parameters, while when this bit is 1, this means that there is one subsequent parameter byte. Further, the MSB of the parameter byte is always the parameter extension bit, and when this bit is 0 this means that the parameter terminates with this byte, while when this bit is 1, this means that there is one subsequent parameter byte. By the parameter extension bit operating in this manner, it is possible to extend the parameters indefinitely.

Initial State: -
Related Commands:
Commands related in the direction of applying an effect (Setting)
  None
Commands related in the direction of receiving an effect (Setting)
  None
Commands related in the direction of applying an effect (Operation)
  None
Commands related in the direction of receiving an effect (Operation)
  None

6.32 Select printing color "<COLR>"

Format:

<1000xxxx>B

Range of Values for Parameters:

10000000B, 10000001B, 10000010B, 10000100B, 10001001B, 10001010B

Function:

1) Each parameter sets the color for the raster data:
   10000000B: black
   10000001B: magenta
   10000010B: cyan
   10000100B: yellow
   Combinations of colors are not allowed.
2) The printing position in the X direction is set to the origin upon the X axis.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.33 Carriage return to left-most print position “<CR >”

Format:

<11100010>B

Range of Values for Parameters: -

Function:

1) The printing position in the X direction is set to the origin upon the X axis.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.34 Exit TIFF compressed mode “<EXIT>”

Format:

<11100011>B

Range of Values for Parameters: -

Function:

1) Terminates compressed mode.
2) The raster data remaining in the printer is all printed.
3) The printing position in the X direction is set to the origin upon the X axis.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

The TIFF ver. 4.0 compression mode set by the ESC .2 command is terminated.

Commands related in the direction of receiving an effect (Setting)

The TIFF ver. 4.0 compression mode is selected with the ESC .2 command.

Commands related in the direction of applying an effect (Operation)

The following commands are ignored:

XFER	CLR
MOVX	CR
MOVY	MOVXBYTE
COLR	MOVXDOT

Commands related in the direction of receiving an effect (Operation)

None

6.35 Set relative horizontal position "<MOVX >"

Format:

<010Fxxxx>B

Range of Values for Parameters:

If F=0: -8 ≤ parameter ≤ 7

If F=1: counter value=1, 2

Parameter=n1 or n1 + n2 x 256

Function:

1) The parameter shows the relative signed horizontal position from the current printing position in the X direction.
   The units may be specified as byte or dot units with the <MOVXBYTE> or <MOVXDOT> command respectively. Directly after the input of the ESC .2 command, <MOVXDOT> is designated.
2) Negative values are expressed in two's complement.
3) The printing position in the X direction is set to (the present position) + (the designated shift amount).
4) A setting past the physical right margin is ignored.
5) A setting past the physical left margin is ignored.

Initial State:

<MOVXDOT> is set.

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

Byte units are set by the MOVXBYTE command.

Dot units are set by the MOVXDOT command.

6.36 Set <MOVX> unit to 8 dots <MOVXBYTE >”

Format:

<11100100>B

Format: <11100100>B

Range of Values for Parameters: -

Function:

1) The unit set by the ESC (U command is taken as standard, and 8 times that unit is taken as 1 unit for the MOVX command.
2) The printing position in the X direction is taken as the origin upon the X axis.

Initial State:

<MOVXDOT> is set.

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The unit is set by the ESC (U command.

6.37 Set <MOVX> unit to 1 dot <MOVXDOT>”

Format:

<11100101>B

Range of Values for Parameters: -

Function:

1) The unit set by the ESC (U command is taken as standard, and that unit is taken as 1 unit for the MOVX command.
2) The printing position in the X direction is taken as the origin upon the X axis.

Initial State:

<MOVXDOT> is set.

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

The unit is set by the ESC (U command.

6.38 Set relative vertical position < MOVY >”

Format:

<011Fxxxx>B

Range of Values for Parameters:

If F=0: 0 ≤ parameter ≤ 15 (dot units)

If F=1: counter value=1, 2

Parameter=n1 or n1 + n2 x 256 (dot units)

Function:

1) The parameter shows the relative unsigned vertical position from the current printing position in the Y direction.
2) The printing position in the Y direction is set to (the present position) + (the set displacement position).
3) The printing position in the X axis direction is set to the origin upon the X axis.
4) A setting of more than 44 inches is ignored.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.39 Transfer raster graphics data < XFER >"

Format:

<001Fxxxx>B (n) d1, ..., dn

Range of Values for Parameters:

If F=0: 0 ≤ number of data items ≤ 15

If F=1: counter value = 1, 2

The number of data items = n1 or n1 + n2 x 256

0 ≤ d1, ..., dn ≤ 255

F=0: The four least significant bits show the total number of bytes of compressed data in TIFF ver. 4.0 format.

F=1: The four least significant bits show the number of counter bytes of compressed data.

Function:

1) The meaning of the parameter is shown below.
   Thereafter, the total number of bytes of compressed data in TIFF ver. 4.0 format is shown by one or two bytes, and compressed data continues thereafter.
2) Printing is performed from the present printing position in the X direction of the number of items shown by the parameter of the data specified in TIFF ver. 4.0 compressed format.
3) The printing position in the X direction is set to the position (right end dot position + 1) dots.
4) If image data is designated in the right margin region, the designated data is ignored.

Initial State: -

Related Commands:

Commands related in the direction of applying an effect (Setting)

None

Commands related in the direction of receiving an effect (Setting)

None

Commands related in the direction of applying an effect (Operation)

None

Commands related in the direction of receiving an effect (Operation)

None

6.40 EPSON packet mode exit command (special command)"0 0 0 ESC 1 @EJL 20H 1284.4 0AH @EJL 20H 20H 20H 20H 20H 0AH"

Format:

ASCII	**00H 00H 00H ESC 01H @EJL 20H 1284.4 0AH @EJL 20H 20H 20H 20H 0AH**
Hex	00 00 00 1B 01 40 45 4A 4C 20 31 32 38 34 2E 34 0A 40 45 4A 4C 20 20 20 20 20 0A
Dec	00 00 00 27 01 64 69 74 76 32 49 50 56 52 46 52 10 64 69 74 76 32 32 32 32 32 10

Range of Values for Parameters: ---

Function:

1) USB-I/F is controlled and is communicated to by the packet communication protocol (EPSON packet mode). Because of this all the data the usual printing data is discarded. This command cancels this packet protocol and enable the printing in usual data transfer.
2) This command transfers it before the initial setting.

Initial State:

EPSON packet mode

Related Commands: ---

6.41 Enter Remote Mode ESC "(R" 08H 00H 00H "REMOTE1

Format:

ASCII	**ESC**	**(**	**R**	**08H**	**00H**	**00H**	**R E M O T E 1**
Hex	1B	28	52	08	00	00	52 45 4D 4F 54 45 31
Decimal	27	40	82	8	0	0	82 69 77 79 84 69 49

Function:

* The present emulation mode is terminated, and enter remote mode.
* The remote mode is continued until the remote mode terminate command is received.
* Print data present in the buffer at the time point that this command is received is printed before enter the remote mode.
* In the remote mode, following XX [nL] [nH] [00H] [m1] ... [mx] type control codes are available.

  Change Printer Settings : XX [nL] [nH] [00H] [m1] ... [mx]

  XX is a string of 2 ASCII characters defining a feature of this command. [nL] [nH] is 2 byte hexadecimal value that denotes the length of the [00H] and [m1] ... [mx] parameters. [m1] ... [mx] parameters is used to describe detailed command function and represent printer settings.

* This command is only valid in text mode.

6.42 Select Paper Feed Sequence "SN" 03H 00H 00H m1 m2

Format:

ASCII	**S**	**N**	**03H**	**00H**	**00H**	**m1**	**m2**
Hex	53	4E	03	08	00	m1	m2
Decimal	83	78	3	8	0	m1	m2

Parameters:

* Each of the parameters m1 and m2 is a one byte binary format parameter, and these select the mechanical sequence as follows:

m1	m2	Mechanical sequence	Selection
00H	00H		Default
00H	01H	Paper feed	Plain paper
00H	02H	sequence	Postcards
00H	03H		Film paper
00H	04H		Envelopes
00H	05H		Plain Paper(Load Quickly)
00H	06H		Back light film
00H	07H		Mat paper
00H	08H		Photo paper
01H	00H	Platen gap	Default (t=0.1)
01H	01H		Gap1 (t=0.2)
01H	02H		Gap2 (t=0.3)
02H	00H	Paper loading speed	Default (Normal)
02H	01H		Speed1 (Fast)
02H	02H		Speed2 (Slow)
03H to FFH	-	Reserved	-

Depending on the paper size and the type of paper used, the EPSON Stylus Photo 870 printer should receive SN command values for paper feeding as displayed in the following tables:

Table 13 Values for 2nd paramter when 1st parameter is 00H (Paper feed mode) in the SN command.

Paper type	Plain Paper	360dpi Ink Jet Paper	Photo Quality Ink Jet Paper	Matte Paper - Heavy weight	Photo Paper	Photo Quality Glossy Film	Ink Jet Transparencies	Back Light Film
Legal	00	07	07	06	08	03	03	-
Letter	01	07	07	06	08	03	03	-
A4	01	07	07	06	08	03	03	-
A5	01	07	07	06	08	03	03	-
B5	01	07	07	06	08	03	03	-
Executive	01	07	07	06	08	03	03	-
Half-Letter	01	07	07	06	08	03	03	-
Panoramic Photo Paper	00	07	07	06	08	03	03	-
Photo Paper4 x 6 inch	00	07	07	06	08	03	03	-
A6 Index Card	02	02	02	06	08	03	03	-
5in. x 8in. Index Card	02	02	02	06	08	03	03	-
8in. x 10in. Index Card	02	02	02	06	08	03	03	-
Photo Paper100x150 mm	00	07	07	06	08	03	03	-
Photo Paper200x300 mm	00	07	07	06	08	03	03	-
Postcard	02	02	02	02	08	03	03	-
Return postcard	02	02	02	02	08	03	03	-
Envelope #10	04	04	04	04	08	03	03	-
Envelope C6	04	04	04	04	08	03	03	-
Envelope DL	04	04	04	04	08	03	03	-
Envelope132x220	04	04	04	04	08	03	03	-
Yokei 1,2,3,4	04	04	04	04	08	03	03	-
Tyokei 3	06	06	06	06	08	03	03	-
Tyokei 4	06	06	06	06	08	03	03	-
User-defined	00	07	07	06	08	03	03	-

Table 14 Values for 2nd parameter when 1st parameter is 01H (Paper gap mode) in the SN command.

Paper type	Plain Paper	360dpi Ink Jet Paper	Photo Quality Ink Jet Paper	Matte Paper - Heavy weight	Photo Paper	Photo Quality Glossy Film	Ink Jet Transparencies	Back Light Film
Legal	00	00	00	01	01	00	00	-
Letter	00	00	00	01	01	00	00	-
A4	00	00	00	01	01	00	00	-
A5	00	00	00	01	01	00	00	-
B5	00	00	00	01	01	00	00	-
Executive	00	00	00	01	01	00	00	-
Half-Letter	00	00	00	01	01	00	00	-
Panoramic Photo Paper	00	00	00	01	01	00	00	-
Photo Paper4 x 6 inch	00	00	00	01	01	00	00	-
A6 Index Card	01	01	01	01	01	01	01	-
5in. x 8in. Index Card	01	01	01	01	01	01	01	-
8in. x 10in. Index Card	01	01	01	01	01	01	01	-
Photo Paper100x150 mm	01	01	01	01	01	01	01	-
Photo Paper200x300 mm	01	01	01	01	01	01	01	-
Postcard	-	-	-	-	-	-	-	-
Return postcard	-	-	-	-	-	-	-	-
Envelope #10	02	02	02	02	02	02	02	-
Envelope C6	02	02	02	02	02	02	02	-
Envelope DL	02	02	02	02	02	02	02	-
Envelope132x220	02	02	02	02	02	02	02	-
Yokei 1,2,3,4	-	-	-	-	-	-	-	-
Tyokei 3	-	-	-	-	-	-	-	-
Tyokei 4	-	-	-	-	-	-	-	-
User-defined	00	00	00	01	01	00	00	

Table 15 Values for 2nd parameter when 1st parameter is 02H (Feed speed mode) in the SN command.

mode	Print density (horizontal x vertical)	Micro Weave	2nd parameter
Economy	120(360)dpi x 120dpi	OFF	03
Normal	360dpi x 360dpi	OFF	02
Normal	360dpi x 360dpi	ON	01
Fine	360dpi x 720dpi	ON	00
Photo(720)	720dpi x 720dpi	ON	00
Photo(1440)	1440dpi x 720dpi	ON	00

Function:

* Changes the mechanical sequence for the default environment to the value specified by m1 and m2.
* If the parameter is out of range (03H - FFH), this command is ignored, and the previous setting is maintained.
* This command is only valid in remote mode.

6.43 Select Paper Feed Sequence "EX" 03H 00H 00H m1 m2

Format:

ASCII	**E**	**X**	**03H**	**00H**	**00H**	**m1**	**m2**
Hex	45	58	03	00	00	m1	m2
Decimal	69	88	3	0	0	m1	m2

Parameters:

* Each of the parameters m1 and m2 is a one byte binary format parameter, and these select the mechanical sequence as follows:

m1	m2	Mechanical sequence	Selection
00H	00H	Paper feed sequence	Default
00H	01H		Plain paper
00H	02H		Postcards
00H	03H		Film paper
00H	04H		Envelopes
00H	05H		Plain Paper(Load Quickly)
00H	06H		Back light film
00H	07H		Mat paper
00H	08H		Photo paper
01H	00H	Platen gap	Default (t=0.1)
01H	01H		Gap1 (t=0.2)
01H	02H		Gap2 (t=0.3)
02H	00H	Paper loading speed	Default (Normal)
02H	01H		Speed1 (Fast)
02H	02H		Speed2 (Slow)
03H to FFH	-	Reserved	-

* With the EPSON Stylus Photo 870, the paper feed sequence shown in Section 2.3, "Paper Feed Mode", according to the paper size and type, must be selected.

[Function]

* Changes the mechanical sequence for the default environment to the value specified by m1 and m2.
* If the parameter is out of range (03H - FFH), this command is ignored, and the previous setting is maintained.
* This command is only valid in remote mode.

Set Roll Paper Mode “EX" 06H 00H 00H 00H 00H 00H 05H m1

Format:

ASCII	**E**	**X**	**06H**	**00H**	**00H**	**00H**	**00H**	**00H**	**05H**	**m1**
Hex	45	58	06	00	00	00	00	00	05	m1
Decimal	69	88	6	0	0	0	0	0	5	m1

Parameters:

* The parameter m1 is a one byte binary format parameter, and this select the roll paper mode as follows:

m1	Roll Paper Mode
00H	Off
01H	On
02H to FFH	Reserved

Function:

* Changes the roll paper mode the default environment to the value specified by m1.
* If the parameter is out of range (02H - FFH), this command is ignored, and the previous setting is maintained.
* This command is only valid in remote mode.

6.44 Terminate Remote Mode ESC 00H 00H 00H

Format:

ASCII	**ESC**	**00H**	**00H**	**00H**
Hex	1B	00	00	00
Decimal	27	0	0	0

Function:

- Copies the default environment to the current setting.
- Executes the ESC "@" command in ESC/P2. (Execute software initialization.)
  Exits from Remote mode and enters to the mode of the selected printer control language.